

AMENDMENTS TO THE CLAIMS

1. **(Previously Presented)** An isolated nucleic acid molecule encoding a branching enzyme from a bacterium of the genus *Neisseria* selected from the group consisting of
 - (a) a nucleic acid molecule encoding a protein which comprises the amino acid sequence depicted in SEQ ID NO. 2;
 - (b) a nucleic acid molecule comprising the coding region depicted in SEQ ID NO. 1;
 - (c) a nucleic acid molecule encoding a protein which comprises the amino acid sequence encoded by the insert in plasmid DSM 12425;
 - (d) a nucleic acid molecule comprising the coding region which is contained in the insert of the plasmid DSM 12425;
 - (e) a nucleic acid molecule encoding a protein the sequence of which has, in the first 100 amino acids, a homology of at least 95% to the amino acid sequence depicted in SEQ ID NO. 2, and wherein positions 1-7 are SEQ ID NO:8, positions 52-57 are SEQ ID NO:9, positions 88-94 are SEQ ID NO:10, positions 100-104 are SEQ ID NO:11, positions 109-113 are SEQ ID NO:12 and positions 115-119 are SEQ ID NO:13; and
 - (f) a nucleic acid molecule having more than 90% identity with SEQ ID NO:1.
2. **(Original)** A vector containing a nucleic acid molecule according to claim 1.
3. **(Original)** The vector according to claim 2, wherein the nucleic acid molecule is linked in sense-orientation to regulatory sequences guaranteeing the transcription in prokaryotic or eukaryotic cells.
4. **(Original)** A host cell which is genetically modified with a nucleic acid molecule according to claim 1 or with a vector according to claim 2 or 3.

5. **(Original)** A method for producing a branching enzyme from a bacterium of the genus *Neisseria*, wherein a host cell according to claim 4 is cultivated under conditions allowing the expression of the protein, and wherein the protein is isolated from the cultivated cells and/or the culture medium.
6. **(Withdrawn)** A method for producing a branching enzyme from a bacterium of the genus *Neisseria*, wherein the protein is produced in an in-vitro transcription and translation system using a nucleic acid molecule according to claim 1.
7. **(Withdrawn)** A protein encoded by a nucleic acid molecule according to claim 1 or obtainable by a method according to claim 5.
8. **(Withdrawn)** An antibody which specifically recognises a protein according to claim 7.
9. **(Withdrawn)** Use of a protein according to claim 7 for producing α -1,6-branched α -1,4-glucans in in-vitro systems.
10. **(Original)** A transgenic plant cell containing a nucleic acid molecule according to claim 1, wherein the nucleic acid molecule is linked to regulatory sequences guaranteeing the transcription in plant cells.
11. **(Original)** The transgenic plant cell according to claim 10, wherein the nucleic acid molecule is linked to a sequence encoding a signal sequence which guarantees the localisation of the encoded protein in the plastids of the cells.

12. **(Original)** A transgenic plant containing plant cells according to claim 10.

13. **(Original)** A method for producing a transgenic plant, wherein

- (a) a plant cell is genetically modified by introducing a nucleic acid molecule according to claim 1 or a vector according to claim 2 or 3;
- (b) a plant is regenerated from the cell produced according to step (a); and
- (c) optionally further plants are produced from the plant produced according to step (b).

14. **(Previously Presented)** Harvestable parts of plants according to claim 12, wherein said parts of plants contain transgenic plant cells.

15. **(Withdrawn)** Starch obtainable from transgenic plant cells according to claim 1 or from parts of plants containing said transgenic plant cells.

16. **(Withdrawn)** The starch according to claim 15, wherein the composition of the starch is modified in such a way that it has an increased gel texture and/or a reduced phosphate content and/or a reduced peak viscosity and/or a reduced pastification temperature and/or a reduced size of the starch granules and/or a modified distribution of the side-chains in comparison with the starch from corresponding wild type plants.

17. **(Previously Presented)** The isolated nucleic acid molecule according to claim 1 having more than 95% identity with SEQ ID NO:1.

18. **(Previously Presented)** The isolated nucleic acid molecule according to claim 1 which encodes the amino acid sequence depicted in SEQ ID NO:2.

19. **(Previously Presented)** The isolated nucleic acid molecule according to claim 1 which has the sequence depicted in SEQ ID NO:1.

20. **(Previously Presented)** The isolated nucleic acid molecule according to claim 1 which encodes the amino acid sequence encoded by the insert in plasmid DSM 12425.

21. **(Previously Presented)** A vector containing a nucleic acid molecule according to any one of claims 17-20.

22. **(Previously Presented)** A host cell which is genetically modified with a vector according to claim 21.

23. **(Currently Amended)** A method for producing a branching enzyme from a bacterium of the genus *Neisseria*, wherein a host cell ~~according to claim 22 which is genetically modified with a vector containing a nucleic acid molecule selected from the group consisting of a nucleic acid having more than 95% identity with SEQ ID NO:1, a nucleic acid which encodes the amino acid sequence depicted in SEQ ID NO:2, a nucleic acid molecule which has the sequence depicted in SEQ ID NO:1 and a nucleic acid molecule which encodes the amino acid sequence encoded by the insert in plasmid DSM 12425~~ is cultivated under conditions allowing the expression of the protein, and wherein the protein is isolated from the cultivated cells and/or the culture medium.

24. **(Previously Presented)** A transgenic plant cell containing a nucleic acid molecule according to any one of claims 17-20, wherein the nucleic acid molecule is linked to regulatory sequences guaranteeing the transcription in plant cells.

25. **(Previously Presented)** The transgenic plant cell according to claim 24, wherein the nucleic acid molecule is linked to a sequence encoding a signal sequence which guarantees the localisation of the encoded protein in the plastids of the cells.

26. **(Previously Presented)** A transgenic plant containing a plant cell according to claim 24.

27. **(Previously Presented)** A method for producing a transgenic plant, wherein

- (a) a plant cell is genetically modified by introducing a nucleic acid molecule according to any one of claims 17-20;
- (b) a plant is regenerated from the cell produced according to step (a); and
- (c) optionally further plants are produced from the plant produced according to step (b).

28. **(Previously Presented)** Harvestable parts of a plant according to claim 26, wherein said parts of plants contain transgenic plant cells.

29. **(Previously Presented)** The host cell according to claim 4, which is a bacterial cell.

30. **(Previously Presented)** The host cell according to claim 22, which is a bacterial cell.

31. **(Previously Presented)** The host cell according to claim 29, which is an E. coli cell.

32. **(Previously Presented)** The A host cell which is genetically modified with a vector containing a nucleic acid molecule selected from the group consisting of a nucleic acid having more than 95% identity with SEQ ID NO:1, a nucleic acid which encodes the amino acid sequence depicted in SEQ ID NO:2, a nucleic acid molecule which has the sequence depicted in SEQ ID NO:1 and a nucleic acid molecule which encodes the amino acid sequence encoded by the insert in plasmid DSM 12425 according to claim 30, which is an E. coli cell.

33. **(Previously Presented)** The host cell according to claim 4, which is a fungal cell.

34. **(Currently Amended)** The A host cell according to claim 22 which is genetically modified with a vector containing a nucleic acid molecule selected from the group consisting of a nucleic acid having more than 95% identity with SEQ ID NO:1, a nucleic acid which encodes the amino acid sequence depicted in SEQ ID NO:2, a nucleic acid molecule which has the sequence depicted in SEQ ID NO:1 and a nucleic acid molecule which encodes the amino acid sequence encoded by the insert in plasmid DSM 12425, which is a fungal cell.

35. **(Previously Presented)** The host cell according to claim 33, which is a yeast cell.

36. **(Previously Presented)** The host cell according to claim 34, which is a yeast cell.

37. **(Previously Presented)** The host cell according to claim 4, which is a plant cell.

38. **(Previously Presented)** The host cell according to claim 22, which is a plant cell.

39. **(Previously Presented)** The host cell according to claim 37, wherein said plant is selected from the group consisting of wheat, barley, oat, rye, potato, maize, rice, pea, cassava and mung bean.

40. **(Previously Presented)** The host cell according to claim 38, wherein said plant is selected from the group consisting of wheat, barley, oat, rye, potato, maize, rice, pea, cassava and mung bean.

41. **(Previously Presented)** The transgenic plant according to claim 12, wherein said plant is selected from the group consisting of wheat, barley, oat, rye, potato, maize, rice, pea, cassava and mung bean.

42. **(Previously Presented)** The transgenic plant according to claim 26, wherein said plant is selected from the group consisting of wheat, barley, oat, rye, potato, maize, rice, pea, cassava and mung bean.

43. **(Previously Presented)** The method according to claim 5, wherein said host cell is a bacterial cell.

44. **(Previously Presented)** The method according to claim 23, wherein said host cell is a bacterial cell.

45. **(Currently Amended)** The method according to claim 43, ~~which~~ wherein said host cell is an E. coli cell.

46. **(Currently Amended)** The method according to claim 44, ~~which~~ wherein said host cell is an E. coli cell.

47. **(Previously Presented)** The method according to claim 5, wherein said host cell is a fungal cell.

48. **(Previously Presented)** The method according to claim 23, wherein said host cell is a fungal cell.

49. **(Previously Presented)** The method according to claim 47, which is a yeast cell.

50. **(Previously Presented)** The method according to claim 48, which is a yeast cell.

51. **(Previously Presented)** The method according to claim 13, wherein said plant is a member selected from the group consisting of wheat, barley, oat, rye, potato, maize, rice, pea, cassava and mung bean.

52. **(Previously Presented)** The method according to claim 27, wherein said plant is a member selected from the group consisting of wheat, barley, oat, rye, potato, maize, rice, pea, cassava and mung bean.

53. **(Previously Presented)** Harvestable parts of plants according to claim 14, wherein said plant is a member selected from the group consisting of wheat, barley, oat, rye, potato, maize, rice, pea, cassava and mung bean.

54. **(Previously Presented)** Harvestable parts of plants according to claim 28, wherein said plant is a member selected from the group consisting of wheat, barley, oat, rye, potato, maize, rice, pea, cassava and mung bean.

55. **(NEW)** An isolated nucleic acid molecule from a bacterium of the genus Neisseria selected from the group consisting of

(a) a nucleic acid molecule encoding a protein the sequence of which has, in the first 100 amino acids, a homology of at least 95% to the amino acid sequence depicted in SEQ ID NO. 2; and

(b) a nucleic acid molecule encoding a protein which has 90% homology to SEQ ID NO:2